DOCUMENT RESUME

ED 169 587 CS 502 478

AUTHOR Totusek, Patsy F.
TITLE The Relationship between Classroom Seating Preference and Student Personality Characteristics.
PUB DATE Nov 78
NOTE 34p.; Paper presented at the Annual Meeting of the Speech Communication Association (64th, Minneapolis, Minnesota, November 2-5, 1978)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Classroom Arrangement; *Classroom Communication; Classroom Environment; *Classroom Participation; Classroom Research; *Individual Characteristics; Interaction Process Analysis; Participant Characteristics; *Student Behavior; *Student Participation
IDENTIFIERS *Seating Arrangement

ABSTRACT

A review of research indicates that a relationship may exist between student seating arrangement, student personality characteristics, and student/teacher verbal interaction. To test hypotheses about the functional relationship among these concepts, researchers collected personality data from 285 students in two sections of a college introductory communication course, and observed these students either when the students selected their own seats or when the teachers assigned students to randomly selected seats. Both sections used the same auditorium as a classroom, and seating charts verified the position of each student during class meetings. The results, though not conclusive, lend some support to the two hypotheses of the study; students who choose to sit in "action" seats (the seats of students who most often interact with the teacher--usually the front and central seating positions) tend to receive different personality inventory scores than students who sit elsewhere or who are randomly assigned to sit in action seats. Consequently, students who choose to sit in action seats appear to have greater tendencies toward assertiveness, a high imagination, unconventional attitudes, and a need for help and attention. (RL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Patsy F. Totusek

The Relationship Between Classroom Seating Preference and Student Personality Characteristics

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Patsy F. Totusek

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

ED169587

Investigations of classroom seating positions have revealed student contributions originate more frequently in certain areas of a classroom than others. Sommer (1967) analyzed the distribution of student responses in several different college classroom settings. He examined two conventional classrooms, each of which had four straight rows of seats which faced the instructor. An inspection of these classrooms revealed 71% of the students in the front row participated. Furthermore, students in the middle of a row (i.e., those sitting directly in front of the teacher) participated more than those seated at the ends of the row. Sommer concluded that the greatest amount of student participation occurred in the front seating area, and that the amount of student participation diminished in a linear manner down the center of the room. Crawford (1969) analyzed the distribution of student responses in a small discussion group. Students were allowed to sit wherever they pleased, and unfortunately the front row remained vacant for the course of the experiment. Observations of participation revealed, however, that as distance from the instructor increased, student participation decreased. Tuana (1969) examined participation patterns in three large lecture halls, each of which seated 300 students.

CS502478

All three lecture halls had a middle section and two smaller side sections. A total of 18 classes (ranging from drama to anatomy) met in the three lecture halls. When the participation patterns in each of the 18 classes were analyzed, approximately half of the student questions were found to originate in the front two rows of each center section. Adams (1969) reported results similar to those found by Sommer. Adams used hidden microphones and cameras to record 32 different classroom lessons as taught by 16 primary and secondary instructors. When the amount of participation for each seat was tallied, the front center seats were found to produce the greatest amount of student participation, and the amount of participation decreased in a line directly down the center of the classroom. This pattern of participation was found regardless of the grade level of the class, the teacher's sex or age, or the subjects taught.

On the basis of the studies reviewed, therefore, the greatest amount of verbal student-teacher interaction seems to occur in the front and central seating positions of a classroom. This pattern of participation appears to exist in an auditorium setting as well as in the traditional row-by-column classroom, and has been found to hold true for college, secondary, and elementary levels of instruction. The front and central seating positions, therefore, will ~~henceforth~~ be called "action seats."

Little attention has been paid to the relationship between seating position and student-teacher visual interaction (i.e., eye contact). The research which does exist, however, suggests occupants of action seats frequently engage in student-teacher

eye contact. Breed and Colaiuta (1974) discovered different seating positions were associated with different types of nonverbal behavior. Students who chose to sit in the central seats of a classroom were found to spend a significantly greater amount of time looking at the instructor than students who chose to sit in the side or back seats. Breed and Colaiuta suggest the location of the central seats allowed direct visual interaction between the teacher and the student, and that the high visual interaction encouraged students to be more attentive. Similarly, Sommer (1969) observed students seated in the front and central seats of a classroom had a clear and relatively unobstructed view of the instructor. He found students seated in these seats participated more and became more involved in the subject matter than students whose seating position prevented student-teacher eye contact.

These two studies suggest, therefore, that students who choose to sit in action seats engage in more eye contact with the instructor than students who choose to sit in nonaction seats. Furthermore, high student-teacher eye contact appears to increase the probability of either nonverbal student-teacher interaction (i.e., student attentiveness), or verbal student-teacher interaction (i.e., student participation).

Given the possibility that high verbal and visual interaction seats may be present in every classroom, a closer examination of the phenomenon seemed justified. There are several explanations

which could account for the high interaction seats. One explanation is that the location of the seats maximizes opportunities for student-teacher interaction to such an extent that the participatory tendencies of most action seat occupants are greatly increased. Partial evidence for this explanation has been supplied by Koneya (1973). A second explanation suggests the action seats are habitually selected by students with similar personality traits and seating preferences. Students who choose to sit in action seats, therefore, may simply have a greater tendency toward verbal and visual student-teacher interaction than students who choose to sit in nonaction seats. It is the second explanation which this study focuses upon.

Although research examining the relationship between student personality characteristics and classroom seating preferences is extremely limited, three general tendencies have been observed: a) students with similar personality traits prefer similar seating positions; b) participants have different personality traits than nonparticipants; and c) participants choose to sit in action seats more often than nonparticipants.

Similar Personalities Prefer Similar Seats

Walberg (1969) conducted a study in which he examined the relationship between physical and psychological distance in a high school classroom. A questionnaire designed to review family history, personality, self-concept, attitudes, etc., was distributed to 817 boys and girls. One question asked the students to indicate

their seating preference in a classroom. An analysis of the completed questionnaires revealed a positive relationship between the preferred seat position and specific biographical characteristics. Students who indicated they preferred sitting in the front of the classroom said they liked school, had good study habits, and had a high capacity for academic success. They indicated it was important to be intelligent, get good grades, and have their teachers consider them diligent workers. In general, they felt they had greater success at doing things than most people. On the other hand, students who preferred the back of the classroom were unhappy with school, and did not feel it was important to get good grades. They felt they benefited most from observations made on their own, and they chose "a job that allows you to work by yourself" as the most attractive. It appears, therefore, that students who placed less distance between themselves and the instructor were significantly different on a number of attitudinal dimensions that those who placed a greater amount of distance between themselves and the instructor. The same type of relationship was found to exist in an interview situation. After administering personality tests to 90 psychology students, Leipold (1963) observed which seat each student selected when he came for an interview. Although several seats were available, Leipold found the highly anxious, introverted students consistently selected the seats farthest away from the examiner. Similarly, Patterson and Holmes (1966) found introverts would not approach an interviewer as closely as

extroverts. In examining the relationship between attitude and distance, Mehrabian (1969) found Ss communicating a positive attitude would stand closer to the addressee than Ss communicating a negative attitude. Aiello and Cooper (1972) matched positive and negative affect students and discovered positive affect students communicated with less distance between them than negative affect students.

In summary, there is some evidence that similar seating positions are selected by students with similar personality traits. When students select positions which place little distance between the instructor and themselves, the students may be expected to have an outgoing personality and a positive attitude toward the instructor and the topic in question. Increasing distance may indicate that the student has a withdrawn personality and a negative attitude toward the instructor and the subject in question.

Participants Differ from Nonparticipants

The personality variables of classroom participants and nonparticipants have been compared in at least two major studies. Smith and Dunbar (1951) observed the behavior of 118 college students in a two semester introductory psychology course. The number of voluntary verbal responses made by each student was recorded and found to be consistent from one semester to the next. Participants and nonparticipants were differentiated according to the number of total responses each made. The lowest 34.7%

of the class were arbitrarily labeled "nonparticipants" and the highest 27.1% were labeled "participants." Significant differences between the participants were found on nine of the thirteen measures administered. Similarly, Williams (1971) examined the personality traits of active participants (students averaging one comment per class period), intermediate participants (students averaging one comment every third to fifth class period), and nonparticipants (students not participating unless called on). Personality measures were administered and significant differences among the three groups were found for eight of the 17 dependent measures.

Both studies indicated the participant is characterized by a significantly greater amount of social adjustment than the nonparticipant. Self-confidence, a feeling of security, and a lack of neuroticism seem to be factors which encourage participation. When Mussen and Porter (1959) examined the personality characteristics of participants and nonparticipants in an emergent group, they found similar results. Members perceived as highly effective participants scored significantly greater scores in achievement, feelings of adequacy, and aggression than members perceived as ineffective participants. These findings are consistent with several self-concept theories (Kelly, 1947; Maslow, 1954) which suggest people with low self-esteem avoid interaction in an effort to avoid public criticism.

Participants Select Action Seats

It has been suggested that students with different personality traits prefer sitting in different areas of a classroom. If participants have different personality traits and interaction needs than nonparticipants, each should prefer sitting in different classroom locations. Although research on the seating preferences of participants and nonparticipants is extremely limited, these seating tendencies seem to hold true. When Koneya (1973) had 138 college students indicate their seating preference in a traditional classroom in which the seats were arranged in rows and columns, high verbalizers were found to choose action seats significantly more often than either moderate or low verbalizers. It would appear the front and central seats become action seats, therefore, because they are occupied by students with a high tendency toward student-teacher interaction.

Statement of the Problem

Studies by Sommer (1967) and Adams (1969) indicate student-teacher interaction is greatest for students sitting in the front and central seats. This phenomenon may occur because students with similar personality characteristics and interaction needs prefer similar classroom seating positions. Since further research revealed participants differ significantly from nonparticipants on several personality dimensions, it seems reasonable to assume students sitting in action seats would have different personality traits and interaction needs than students sitting in nonaction

seats. If this assumption is valid, the argument that action seats are a function of personality and seating preference would be strengthened. On the basis of the preceding summary, therefore, the following hypotheses were formulated:

H_1 Ss who choose to sit in action seats will have significantly different personality inventory scores than Ss who choose to sit elsewhere.

H_2 Ss who choose to sit in action seats will have significantly different personality inventory scores than Ss who are randomly assigned to sit in action seats.

Subjects

The Ss in the study (N=285) were undergraduate students enrolled in two sections of an introductory communication course at a large university. The course format, textbooks, and lecture materials were the same for each section. The teaching responsibilities for the two sections were shared by two instructors: one instructor taught each of the sections during the first instructional unit, while the other instructor taught each of the sections during the second instructional unit. Although the course was basically lecture-oriented, student participation was encouraged and occurred primarily in the form of student questions.

Experimental Setting

Both sections met in a small auditorium. The auditorium had 11 rows, with 10-27 seats in each row. The rows were tiered in such a manner that row 11 was the highest point in the auditorium. Although there was not a center aisle in the auditorium,

there was sufficient space between rows to allow easy access to the center seats.

Variables

Classroom Seating Assignment

The sections were randomly assigned to one of two experimental treatment conditons (preference seating or random seating). Seating assignment was defined so as to produce maximum differences between the treatment conditions. In the preference seating treatment condition (PS) Ss were allowed to select their own seats. Since the auditorium holds 210 seats, a great variety of locations were available to the Ss. In the random seating treatment condition (RS) Ss were randomly assigned to seats. Ss chose seats, or were randomly assigned to seats during the third class meeting. Seating charts were used to verify the position of each student.

Action Seats

The action seats were defined as the seats in the front row plus the five center seats in each consecutive, horizontal row. This definition of action seats corresponds with the finding reported by Sommers (1969) and Adams (1969).[1]

Personality Measure

Form A of the Sixteen Personality Factor Questionnaire (16PF)

was administered to each S under standardized conditions. Form A consists of 187 questions, with three alternative answers provided for each question. Sixteen primary personality factors are measured. These factors examine the extent to which an individual is: Factor A - reserved vs. outgoing; Factor B - less intelligent vs. more intelligent; Factor C - affected by feelings vs. emotionally stable; Factor E - submissive vs. assertive; Factor F - silent vs. talkative; Factor G - expedient vs. conscientious; Factor H - shy vs. venturesome; Factor I - self-reliant vs. dependent, expecting attention and help; Factor L - trusting vs. suspicious; Factor M - practical vs. imaginative; Factor N - forthright vs. shrewd; Factor O - placid vs. apprehensive; Factor Q_1 - conservative vs. experimenting; Factor Q_2 - group-dependent vs. self-sufficient; Factor Q_3 - undisciplined vs. controlled; and Factor Q_4 - relaxed vs. tense. In an attempt to minimize deliberate distortion, answers have been constructed so as to be as "neutral" as possible, with one answer not appearing more socially desirable than another. Any tendency to consistently agree has been eliminated by balancing the number of questions for which "yes" and "no" answers contribute positively to the score on each factor (Cattell, Eber, Tatsuoka, 1970).

The construct validity of the 16PF was examined in terms of the criteria suggested by Nunnally (1967). Specifically, an examination was made of the internal statistical structure of questionnaire (i.e., the factor structure), and the degree to which the 16PF correlated with different measures of the same constructs.

The original 1948 factorization on which the 16PF was based has been repeatedly checked by cross validation with various populations and by irdependent rotations (Cattell, 1950; Cattell, 1955; Cattell, 1956). In its present form, the factor loadings on each scale range from .74 to .92, with nine factor loadings exceeding .80 (Cattell & Eber, 1962). The direct validity of each scale is measured by correlating the scale with the pure factor it is supposed to measure. The direct validity coefficients for the fifteen scales in Form A (excluding the intelligence scale) range from .41 to .79. These validity coefficients are among the highest which have been reached for a scale of this length (Cattell et al., 1970).

In comparison with other personality measures, factor analyses of the 16PF and the Guilford-Zimmerman Scales by Sells et al. (1968) and Cattell and Gibbons (1968) indicate both scales occupy the same factor space, but divide it differently: Cattell uses oblique factors, while Guilford uses orthogonal factors. The scales on the two measures cannot be expected to correspond, therefore, except by chance. The relationship between the 16PF and the MMPI is also difficult to assess, since all the items in the MMPI have not been factor analyzed. Although most of the items in the MMPI appear to be maasuring the same dimensions as those in the 16PF, the MMPI has four or five additional items examining pathological deviancy which are not present in

the 16PF (Cattell et al., 1970). Consequently, due to different scale constructions, the correlation between the 16PF and other scales is not as high as might be expected. However, in light of the internal consistency of the individual factors, the 16PF appears to be the best factor-based personality inventory available.

The test-retest reliability coefficients for Form A of the 16PF ranged from .58 to .83 when the test was readministered to Ss (N=146) after a period of 4-7 days. Five scale reliabilities equalled or exceeded .80, and seven scale reliabilities exceeded .70 (Cattell et. al, 1970). This was considered an acceptable range for the purpose of this study.

Overall, therefore, the extensive factor analyses performed on the 16PF during the last two decades provided sufficient confidence in the scales so as to make additional factor analyses unnecessary.

Data Analysis

Hand-scoring stencils were used to obtain the unweighted raw scores for each factor. The raw scores were converted into standard scores by reference to a norm table (college men and women, Form A) in the Norm Supplement to the 16PF Handbook (Cattell et al., 1970).

Each of the 16 factors had ten units for its point scale range, and each unit was called a "sten" (standard ten). The conventional standard-score scale takes the raw score mean of

the population as the central value and steps out one sten for each half standard deviation of raw score. The mean of each factor scale, therefore, had a value of 5.5 stens. A raw score falling between 5.5 and a point one-half a standard deviation downward translated to a sten point of five; a raw score falling between 5.5 and a point one-half a standard deviation upward translated to a sten point of six. The range of "average" or "normal" scores was represented by the area between stens 5 and 6 (i.e., a one-sigma range, centered on the mean). When stens approached 4 and 7, therefore, an individual was considered to be "departing from the average" (Cattell et al., 1970).

Each treatment condition was divided into areas marked "left seats," "action seats," and "right seats." An appropriate examination of the data required statistical analyses of the measures within the treatment conditions as well as between the treatment conditions. Accordingly, a one-way analysis of variance (EdStat, Program Anovar, Veldman, 1971) was performed on the personality "sten" scores for Ss in the three groups within the PS treatment condition (left, action, and right). A two-tailed t test for independent data (EdStat, Program Anovar, Veldman, 1971) was also performed on the personality sten scores for Ss in the action seats in the PS treatment condition and Ss in the action seats in the RS treatment condition. An alpha coefficient of .05 was used in all statistical analyses.

Results

PS Treatment Condition

The first research hypothesis stated Ss who chose to sit in action seats would have significantly different personality inventory scores than Ss who chose to sit elsewhere. No significant differences, however, were found on fifteen of the personality factors for Ss sitting in left, action, and right seats within the PS treatment conditon. However, a significant F ratio was obtained on Factor M ($F=3.99$; $df=2/102$; $p<.03$). A summary of these results is reported in Table 1. The application of Duncan's New Multiple Range Test (Duncan, 1955) to the data revealed Ss seated in action seats received significantly higher scores on Factor M than did Ss seated in either left or right seats (Table 2). Furthermore, Ss seated in action seats had a mean score which fell outside the range of average scores, while Ss seated in nonaction seats had a mean score which fell within the range of average scores. The high scores obtained by action Ss on Factor M imply an unconventional approach to life, an absorption in ideas, an interest in art, a high imagination, and a fanciful nature which often causes the individual to ignore more practical concerns. Within a group context, high M individuals often indicate dissatisfaction with the group unity and the group's method of procedure. Although high M individuals may tend to feel unaccepted by the group, lack of group acceptance does not concern them (Cattell et al., 1970). The scores received on

Factor M, therefore, clearly distinguished action Ss from non-action Ss. These results support the first hypothesis of this study.

On Factors E and I, Ss seated in action seats received higher scores than Ss seated in nonaction seats, with the mean score of Ss in action seats falling outside the range of average scores. The difference between the personality scores of action Ss and nonaction Ss was not significant, however, because Ss seated in nonaction seats also received high scores on these factors. Scores received by nonaction Ss fell either at the extreme end of the range of average scores, or just beyond it. On these two factors, then, almost all of the Ss in the PS treatment condition received scores which were higher than normally expected (Tables 3-4).

PS Action vs. RS Action

The second research hypothesis stated Ss who chose to sit in action seats would have significantly different personality inventory scores than Ss who were randomly assigned to sit in action seats. When the personality scores of action seat Ss in the two treatment conditions were compared, a significant t ratio was found for six factors: Factor E (t=2.43; df=60; $p<.02$); Factor I (t=2.48; df=60; $p<.02$); Factor M (t=2.09; df=60; $p<.04$); Factor N (t=2.21; df=60; $p<.03$); Factor Q_1 (t=2.79; df=60; $p<.01$); and Factor Q_3 (t=2.73; df=60; p<.01) (Tables 5-10).

Ss in the PS treatment condition received significantly higher scores on Factor E than did Ss in the RS treatment condition. Furthermore, the mean score of Ss in the PS treatment condition fell outside the range of average scores, while the mean score of Ss in the RS treatment condition fell within the range of average scores. The results imply that Ss in the PS treatment condition tend to be more aggressive, more assertive, and more competitive than Ss in the RS treatment condition. Research has demonstrated that groups averaging high scores on Factor E interact effectively, feel free to participate, and discuss group problems without difficulty (Cattell et al., 1970).

Ss in the PS treatment condition received significantly higher scores on Factor I than did Ss in the RS treatment condition. The mean score obtained by Ss in the PS treatment condition was considerably higher than the range of average scores. Ss in the RS treatment condition, however, had a mean score which ~~feel~~ fell within the range of average scores. The results suggest that action Ss in the PS treatment condition have specific tendencies which may distinguish them from action Ss in the RS treatment condition. Individuals receiving a high score on Factor I have been found to have an imaginative and dependent nature. High I individuals expect affection and attention from others. They are often described as being fussy, and accused of slowing up group decision-making (Cattell et al., 1970).

Ss in the PS treatment condition received significantly higher scores on Factor M than did Ss in the RS treatment condition.

Again, the mean score of Ss in the PS treatment condition was greater than the range of average scores, while the mean score of Ss in the RS treatment condition fell within the range of average scores. The characteristics of a high M individual were discussed earlier.

Ss in the PS treatment condition received significantly lower scores on Factor N than did Ss in the RS treatment condition. However, the scores of Ss in both treatment conditions fell within the range of average scores. Despite the significant differences between treatment conditions, therefore, Ss in both treatment conditions appear to be fairly normal in the amount of shrewdness, emotion, self-insight and ambition which they display (Cattell et al., 1970).

Ss in the PS treatment condition attained significantly higher scores on Factor Q_1 than did Ss in the RS treatment condition. The scores of Ss in both treatment conditions, however, fell within the range of average scores. The results imply, therefore, that Ss in the PS and RS treatment conditions show average tendencies toward radicalism, experimentation, and group participation (Cattell et al., 1970).

Although Ss in the PS treatment condition received significantly lower scores on Factor Q_3 than did Ss in the RS treatment condition, the mean scores of Ss in both treatment conditions were again considered average responses. The findings suggest that both groups appear to be basically average in the amount of control, will power, and compulsion which they display (Cattell et al., 1970).

On Factors E, I, and M, therefore, action Ss in the PS treatment condition received scores which were significantly different than the scores attained by action Ss in the RS treatment condition, and which fell outside the range of average scores. These results support the second hypothesis of this study, and indicate that action Ss in the PS treatment condition may be differentiated from action Ss in the RS treatment condtion on several factors. However, little difference was found between action Ss and nonaction Ss within the PS treatment condition. Since it was possible that nonaction Ss in the PS treatment condition also differed significantly from action Ss in the RS treatment condition, a one-way analysis of variance was performed to discover the relationship between nonaction Ss in the PS treatment condition, and action Ss in the RS treatment condition. No significant differences between the groups was found on any of the 16 personality factors. Despite the high scores obtained by the nonaction Ss in the RS treatment condition, therefore, only the action Ss in the PS treatment condition were found to differ from the action Ss in the RS treatment condition.

Discussion

PS Treatment Condition

Ss who chose to sit in action seats received significantly higher scores on Factor M than Ss who chose to sit in nonaction seats. More importantly, the mean score of action Ss on Factor M

was considerably greater than the range of average scores, while the mean score of nonaction Ss fell within the range of average scores. The results imply that Ss who chose to sit in action seats had a greater tendency toward creativity, a high imagination, and an unconventional approach to life than Ss who chose to sit in nonaction seats. It is important to note, however, that a particular behavior is rarely expressed by one factor alone, and is usually determined by two or more factors working together (Cattell et al., 1970). It is somewhat surprising, therefore, that only one factor was found to produce significant differences between action and nonaction Ss. There are at least two explanations which could account for this lack of significance. First, the significant difference found between the action and nonaction Ss on Factor M could have been a random effect, found by chance alone. Second, Ss in the PS treatment condition may have failed to represent a normal distribution.[2] As has been previously noted, the mean score of action Ss on Factors E and I fell a considerable distance outside the range of average scores. No significant differences between the scores of action and nonaction Ss were found, however, because the mean scores of nonaction Ss were unusually high. Although Cattell et al. (1970) have found the correlations among Factors E, I, and M range from low to moderate (r_{EI}=.22; r_{ME}=.55; and r_{MI}=.18), they also discovered a high M and a high E score tend to fluctuate together, and a high M and a high I score tend to vary together. Since Factors E, I, and M usually vary together, therefore, there is some reason to

believe that significant effects would have found on Factors E and I had the Ss in the PS treatment condition represented more of a normal distribution. Although each of these explanations appears to be viable, the results found in the PS action vs RS action analysis help to clarify the situation.

PS Action vs RS Action

Significant differences between the action Ss in the two treatment conditions were found on six factors. The mean score of action Ss in the PS treatment condition, however, fell outside the range of expected scores on only three factors (E, I, and M). These findings imply Factors E, I, and M are the most helpful in distinguishing PS action Ss from RS action Ss. Consequently, Ss who chose to sit in action seats appear to have greater tendencies toward assertiveness, a high imagination, unconventional attitudes, and a need for help and attention than Ss who were assigned to sit in action seats.

Although no significant differences were found for Factors E and I in the PS treatment analysis, significant differences were found for Factors E and I in the PS action vs RS action treatment analysis. Evidently the Ss in the RS treatment condition represented more of a normal distribution than the Ss in the PS treatment condition. The consistency with which Factors E and I distinguished themselves, therefore, increases the probability that Factors E and I would have yielded significant differences between action and nonaction Ss in the PS treatment condition had a more normal distribution been present.

The differences found on Factors E, I, and M between action and nonaction Ss suggest Ss who chose to sit in action seats may have personality tendencies similar to those of active participants. On the basis of classroom observations and scores received on the Bell Adjustment Inventory, Smith and Dunbar (1951) discovered voluntary participation is a form of unconventional behavior. Students who engaged in active participation were found to be more socially aggressive and have more nonconforming personality characteristics than students who did not participate. Furthermore, in using the Torrance Tests of Creative Thinking, Verbal Form A, Williams (1971) found participation was related to originality of thought, with active participants receiving higher scores on originality than either intermediate or nonparticipants. Somewhat contrary to Smith and Dunbar's finding, however, Williams found no significant difference between active and nonparticipants on the Introversion-Extraversion trait on the Eysenck Personality Inventory. Since no comparisons have been made of results obtained on the 16PF, the Bell Adjustment Inventory, Torrance Tests of Creative Thinking, or the Eysenck Personality Inventory, there is no way of determining whether or not these instruments measure the same constructs. To the extent to which similar dimensions are being evaluated, however, there is some evidence that both Ss who chose to sit in action seats and active participants share creative, and nonconforming personality tendencies.

Although these observations indicate Factors E, I, and M may be distinguishing variables, the results are merely suggestive.

Of greater importance is the pattern of variance that was established. In 32 comparisons, the only Ss who received a mean score which fell considerably outside the range of average scores were Ss who chose to sit in action seats. There appeared to be a definite tendency, therefore, for Ss who chose to sit in action seats to receive different personality index scores than Ss who chose to sit elsewhere. It should be noted, however, that while Ss who chose to sit in action seats often received scores which deviated from the average response, at no time did action scores deviate so much as to be considered extreme. Any personality differences between action and nonaction Ss, therefore, appear to be moderate rather than great.

One should also remember that a score on a personality inventory cannot always be readily interpreted in terms of observable behavior. Behavior appears to be a product of both personality traits and the particular stimulus situation (Stern, Stein, & Bloom, 1956). Consequently, even though Ss who perferred action seats may have some personality tendencies which differ from those of Ss who prefer to sit elsewhere, whether or not these tendencies are reflected in the behavior of the action Ss is dependent upon the environment in which the behavior is to occur. Taken a step farther, even though Ss who preferred action seats may have some personality traits which are similar to those of an active participant, whether or not Ss who prefer action seats actually participate in a classroom may be dependent upon the type of atmosphere which prevails. The results of this study, therefore, simply

indicate that Ss who select action seats may have a greater susceptibility toward particular types of behaviors, than Ss who choose to sit elsewhere.

Overall, while the results of the personality measure are not conclusive, they lend some support to the first and second hypotheses of this study; students who choose to sit in action seats tend to receive different scores on Form A of the 16PF than students who are randomly assigned to sit in action seats or students who choose to sit elsewhere. If future research finds similar results, the high student-teacher interaction which characterizes the action seats may prove to be a function of personality and seating preferences.

Footnotes

[1] The vertical width of the action seat strip was somewhat arbitrarily defined. However, varying the width of the strip by two or three seats was found to cause no significant differences in the findings.

[2] A pretest was administered to both sections and 70 Ss placed out of the course. Additional students were permitted to enter both sections in order to replace the Ss who had left. The new students were not allowed to take the examination. Hopefully, the incoming Ss were able to somewhat restore the normal distribution within each section. There was no way of determining, however, the extent to which this was accomplished.

Table 1

Analysis of Variance

Factor M - PS Treatment Condition

Source	df	MS	F
Between	2	16.59	3.99*
Within	102	4.15	
Total	104		

*$p < .02$

Table 2

Cell Data

Factor M - PS Treatment Condition

Descriptive Data	Treatment Groups		
	Left	Action	Right
Mean	5.82	7.03*	5.82
Standard Deviation	1.89	2.10	2.15
Cell Size	38	33	34

*$p < .02$

Table 3

Cell Data

Factor E - PS Treatment Condition

Descriptive Data	Treatment Groups		
	Left	Action	Right
Mean	6.66	6.85	6.41
Standard Deviation	1.96	1.77	.42
Cell Size	38	33	34

Table 4

Cell Data

Factor I - PS Treatment Condition

Descriptive Data	Treatment Groups		
	Left	Action	Right
Mean	6.71	7.39	6.65
Standard Deviation	1.87	.58	2.00
Cell Size	38	33	34

Table 5

Cell Data

Factor E - PS Action vs RS Action

Descriptive Data	Treatment Groups	
	PS	RS
Mean	6.85*	5.72
Standard Deviation	1.77	2.00
Cell Size	33	29

*$p < .02$

Table 6

Cell Data

Factor I - PS Action vs RS Action

Descriptive Data	Treatment Groups	
	PS	RS
Mean	7.39*	6.14
Standard Deviation	.58	1.74
Cell Size	33	29

*$p < .02$

Table 7

Cell Data

Factor M - PS Action vs RS Action

Descriptive Data	Treatment Groups	
	PS	RS
Mean	7.03*	5.86
Standard Deviation	2.10	1.91
Cell Size	33	29

*$p < .04$

Table 8

Cell Data

Factor N - PS Action vs RS Action

Descriptive Data	Treatment Groups	
	PS	RS
Mean	5.15*	6.38
Standard Deviation	2.24	1.87
Cell Size	33	29

*$p < .03$

Table 9

Cell Data

Factor Q_1 - PS Action vs RS Action

Descriptive Data	Treatment Groups	
	PS	RS
Mean	6.42*	5.17
Standard Deviation	1.64	1.87
Cell Size	33	29

*$p < .01$

Table 10

Cell Data

Factor Q_3 - PS Action vs RS Action

Descriptive Data	Treatment Groups	
	PS	RS
Mean	4.82*	6.10
Standard Deviation	1.76	2.32
Cell Size	33	29

*$p < .01$

References

Adams, R. Location as a feature of instructional interaction. Merrill-Palmer Quarterly, 1969, 15, 309-32.

Aiello, J. R., & Cooper, R. E. The use of personal space as as function of social affect. Proceedings of the Annual Convention of the American Psychological Association, 1972, 7, 207-208.

Breed, G., & Colaiuta, V. Looking, blinking, and sitting nonverbal dynamics in the classroom. Journal of Communication, 1974, 24, 75-81.

Cattell, R. B. The main personality factors in questionnaire, self-estimate material. Journal of Social Psychology, 1950, 31, 3-38.

Cattell, R. B. The principal relicated factors discovered in in objective personality tests. Journal of Abnormal and Social Psychology, 1955, 50, 291-314.

Cattell, R. B. Second-order personality factors in the questionnaire realm. Journal of Consulting Psychology, 1956, 20, 411-418.

Cattell, R. B., & Eber, H. Manual for Forms A and B of the sixteen personality factor questionnaire. Champaign, Ill.: Institute of Personality and Ability Testing, 1970.

Cattell, R. B., Eber, H. W., & Tatsuoka, M. M. Handbook for the sixteen personality factor questionnaire. Champaign, Ill.: Institute of Personality and Ability Testing, 1970.

Cattell, R. B., & Gibbons, B. D. Personality factor structure of combined Guilford and Cattell personality questionnaires. Journal of Personality and Social Psychology, 1968, 9, 107-120.

Crawford, J. Unpublished manuscript (Sommer, R. Personal space. Englewood Cliffs, New Jersey: Prentice-Hall, 1969).

Duncan, D. B. Multiple range and multiple F tests. Biometrics, 1955, 11, 1-42.

Kelly, E. C. Education for what is real. New York: Harper, 1954.

Koneya, M. The relationship between verbal interaction and seat location of members of large groups. Unpublished doctoral dissertation, University of Denver, 1973.

Leipold, W. D. Psychological distance in a dyadic interview as a function of introversion-extroversion, anxiety, social desirability, and stress. Unpublished doctoral dissertation, University of North Dakota, 1963.

Maslow, A. H. Motivation and Personality. New York: Harper, 1954.

Mehrabian, A. Significance of posture and position in the communication of attitude and status relationships. Psychological Bulletin, 1969, 71, 359-372.

Mussen, P. H., & Porter, L. W. Personal motivations and self-conceptions associated with effectiveness and ineffectiveness in emergent groups. Journal of Abnormal and Social Psycholoiy, 1959, 59, 23-27.

Patterson, M. C., & Holmes, D. S. Social interaction correlates of the MPI extroversion-introversion scale. American Psychologist, 1966, 21, 724-725. (Abstract)

Sells, S. B., Demarce, R. G., & Will, D. P. A taxonomic investigation of personality conjoint factor structure of Guilford and Cattell trait markers. Mimeo report on Project No. OE50072, Office of Education, Department of Health, Education & Welfare, 1968. (Cattell, R. B., Ever, H. W., & Tatsuoka, M. M. Handbook for the sixteen personality factor questionnaire. Champaign, Ill.: Institute of Personality and Ability Testing, 1970.)

Smith, H. L., & Dunbar, D. S. The personality and achievement of the classroom participant. Journal of Educational Psychology, 1951, 42, 65-84.

Sommer, R. Classroom ecology. Journal of Applied Behavioral Science, 1967, 3, 489-503.

Sommer, R. Personal space. Englewood Cliffs, New Jersey: Prentice Hall, 1969.

Stern, G., Stein, M., & Bloom, B. Methods in personality assessment. Glencoe, Ill.: Free Press, 1956.

Tuana, S. Unpublished manuscript (Sommer, R. Personal space. Englewood Cliffs, New Jersey: Prentice-Hall, 1969).

Veldman, D. J. EdStat-V user manual. University of Texas, 1971.

Walberg, J. W. Physical and psychological distance in the classroom. School Review, 1969, 77, 64-70.

Williams, R. L. Relationship of class participation to personality, ability, and achievement variables. Journal of Social Psychology, 1971, 83, 193-198.